

ABSTRACT OF THE DISCLOSURE

A bimorphic polymeric photomechanical actuator, in one embodiment using polyvinylidene fluoride (PVDF) as a photosensitive body, transmitting light over fiber optic cables, and controlling the shape and pulse duration of the light pulse to control movement of the actuator. Multiple light beams are utilized to generate different ranges of motion for the actuator from a single photomechanical body and alternative designs use multiple light beams and multiple photomechanical bodies to provide controlled movement. Actuator movement using one or more ranges of motion is utilized to control motion to position an actuating element in three dimensional space.